then reduced and the particle which is moved at the reduced speed in the air flow is identified in an identification unit by means of interaction with monochromatic light.

The [In accordance with the invention] identification of the particles is effected by combined laser-Raman spectroscopy which [, with a short exposure time, by virtue of the use of powerful light sources, strong-light optics and in particular by the renunciation of high levels of optical resolution,] affords results which can be used for automated evaluation. The low level of spectral resolution is used to advantage.

Amendments to the Drawings

A substitute Figure 2 is presented to translate German legends in to English, as supported by the verified translation.

Amendments to the Claims

After the heading "CLAIMS" and before the beginning of the claims, please insert the words: -- What is claimed is: --

Please amend the claims as follows:

1. (amended) An optical method for characterization of particulate systems, wherein [characterized in that] an air flow from the ambient air is guided at a defined speed by a particle feeder past a first scattered light measuring unit and the scattered light is detected, the speed of the particle is then reduced and the particle which is moved at the reduced speed in the air flow is identified in an identification unit by means of interaction with monochromatic light.

2. (amended) The [A] method of claim 1, wherein [as set forth in claim 1 characterized in that] the scattered light measuring unit triggers the optical system of the identification unit by means of a control.

3. (amended) The [A] method of claim 2, wherein [as set forth in claim 2 characterized in that] particles with preselected properties are investigated by means of logical linking of the scattered light measuring unit and the optical system of the identification unit.

4. (amended) The [A] method of claim 3, wherein [as set forth in one of claims 1 through 3 characterized in that] identification of the particles is effected by means of combined laser-Raman spectroscopy.

5. (amended) The [A] method of claim 4, wherein [as set forth in one of the preceding claims characterized in that] the particle is reduced to such a speed that a measuring time of between approximately 1 ms and 1 s is available for the particle.

6. (amended) The [A] method of claim 5, wherein [as set forth in one of the preceding claims characterized in that] the Raman spectra obtained are compared after chemometric analysis with a database and associated therewith.

7. (amended) A device for carrying out a method of optically characterizing particulate systems in a flow of an ambient air, [the method as set forth in one of claims 1 through 6] comprising:

a particle feeder and

an electronic evaluation unit for characterizing particulate systems, comprising at least the following modules [characterized in that the unit for characterization of particulate systems comprises module units which include at least]:

[-] an optical unit for determining the size and number of particles in the [an] air flow [from the ambient air],

[-] a particle brake,

[-] an optical identification unit for the moved particles contained in the air flow, comprising corona discharge, excitation laser and spectrometer units [unit], and

[-] an electronic control.

8. (amended) The [A] device of claim 7, wherein [as set forth in claim 7 characterized in that] the particle brake is an electromagnetic brake.

9. (amended) The [A] device of claim 8, wherein [as set forth in claim 7 or claim 8 characterized in that] the optical identification unit comprises [includes] a narrow-band light source and an NIR multichannel spectrometer.

10. (amended) The [A] device of claim 9, wherein [as set forth in claim 9 characterized in] the light source is a monochromatic light source.

11. (amended) The [A] device of claim 10, wherein [as set forth in one of claims 7 through 10 characterized in that] the spectrometer unit comprises at least one microspectrometer.

12. (amended) The [A] device of claim 11, wherein said at least one [as set forth in claim 11 characterized in that] the microspectrometer is arranged in such a way to achieve [that] spectral resolution of at least fifteen wave numbers [is achieved].

13. (amended) The [A] device of claim 11, wherein [as set forth in one of claims 7 through 12 characterized in that] the microspectrometer of the optical identification unit is replaced by other suitable spectroscopic devices in dependence on the particles to be analyzed.

14. (amended) The [A] device of claim 12, wherein [as set forth in one of claims 7 through 13 characterized in that] the electronic control comprises [is an electronic control which includes] a programmable AD-converter card with integrated processor and an integrated control program.

Please add the following new claims:

15. (new) The device of claim 7, wherein the optical identification unit comprises a narrow-band light source and an NIR multichannel spectrometer.

16. (new) The device of claim 15, wherein the light source is a monochromatic light source.

17. (new) The device of claim 7, wherein the spectrometer unit comprises at least one microspectrometer.

18. (new) The device of claim 7, wherein the electronic control comprises a programmable AD-converter card with integrated processor and an integrated control program.

19. (new) An optical method for the characterizing a particulate system in a flow of an ambient air, the method comprising the steps of:

guiding at a defined speed the air flow containing particles from the ambient air by a particle feeder past a first scattered light measuring unit;

detecting light scattered by the particles in the first measuring unit:

reducing the speed of the particles; and

identifying the reduced speed particles in the air flow in an identification unit by means of interaction with monochromatic light.

20. (new) The method of claim 19, wherein the step of detecting scattered light in the scattered light measuring unit triggers a control in the identification unit.

21. (new) The method of claim 20, wherein the particles having preselected properties are investigated by means of the combination of the scattered light measuring unit and the optical system of the identification unit.

22. (new) The method as of claim 21, wherein the identifying step is effected by a combined laser-Raman spectroscopy.

23. (new) The method of claim 22, wherein the speed reducing step reduces the particle to such a speed to provide a measuring time of between 1 millisecond and 1 second.

24. (new) The method of claim 22, wherein the identifying step further comprises comparing and associating the Raman spectra obtained after chemometric analysis with a database.

25. (new) The method as of claim 19, wherein the identifying step is effected by a combined laser-Raman spectroscopy.

26. (new) The method of claim 19, wherein the speed reducing step reduces the particle to such a speed to provide a measuring time of between 1 millisecond and 1 second.